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METHOD OF PLASTIC DEFORMATION OF METALS AND ALLOYS, (U)
SEP 77 S Z FIGLIN, A B GERCHIKOV, Y G KALPIN
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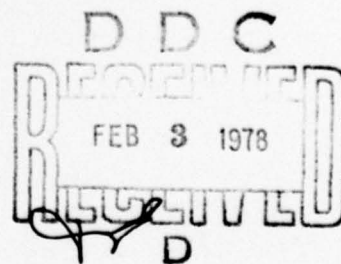
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METHOD OF PLASTIC DEFORMATION OF METALS AND ALLOYS

by

S. Z. Figlin, A. B. Gerchikov,
Yu. G. Kalpin



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В в	В в	V, v	Т т	Т т	T, t
Г г	Г г	G, g	У у	У у	U, u
Д д	Д д	D, d	Ф ф	Ф ф	F, f
Е е	Е е	Ye, ye; E, e*	Х х	Х х	Kh, kh
Ж ж	Ж ж	Zh, zh	Ц ц	Ц ц	Ts, ts
З э	З э	Z, z	Ч ч	Ч ч	Ch, ch
И и	И и	I, i	Ш ш	Ш ш	Sh, sh
Й й	Й й	Y, y	Щ щ	Щ щ	Shch, shch
Н н	Н н	K, k	Ъ ъ	Ъ ъ	"
Л л	Л л	L, l	Ы ы	Ы ы	Y, y
М м	М м	M, m	Ь ь	Ь ь	'
Н н	Н н	N, n	Э э	Э э	E, e
О о	О о	O, o	Ю ю	Ю ю	Yu, yu
П п	П п	P, p	Я я	Я я	Ya, ya

*ye initially, after vowels, and after Ъ, ъ; e elsewhere.
 When written as ë in Russian, transliterate as yë or ë.
 The use of diacritical marks is preferred, but such marks may be omitted when expediency dictates.

GREEK ALPHABET

Alpha	A α α	Nu	N ν
Beta	B β	Xi	Ξ ξ
Gamma	Γ γ	Omicron	Ο ο
Delta	Δ δ	Pi	Π π
Epsilon	Ε ε ε	Rho	Ρ ρ ϑ
Zeta	Ζ ζ	Sigma	Σ σ ς
Eta	Η η	Tau	Τ τ
Theta	Θ θ ϑ	Upsilon	Υ υ
Iota	Ι ι	Phi	Φ φ ϕ
Kappa	Κ κ κ	Chi	Χ χ
Lambda	Λ λ	Psi	Ψ ψ
Mu	Μ μ	Omega	Ω ω

RUSSIAN AND ENGLISH TRIGONOMETRIC FUNCTIONS

Russian	English
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sin	sin
cos	cos
tg	tan
ctg	cot
sec	sec
cosec	csc
sh	sinh
ch	cosh
th	tanh
cth	coth
sch	sech
csch	csch
arc sin	\sin^{-1}
arc cos	\cos^{-1}
arc tg	\tan^{-1}
arc ctg	\cot^{-1}
arc sec	\sec^{-1}
arc cosec	\csc^{-1}
arc sh	\sinh^{-1}
arc ch	\cosh^{-1}
arc th	\tanh^{-1}
arc cth	\coth^{-1}
arc sch	sech^{-1}
arc csch	csch^{-1}

rot	curl
lg	log

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METHOD OF PLASTIC DEFORMATION OF METALS AND ALLOYS

S. Z. Figlin, A. B. Gerchikov and Yu. G. Kalpin

Methods are known for plastic deformation of metals and alloys with heating of the billet in a molten medium, for example, of salts.

In accordance with the described method for deformation of high-alloy, low-plastic alloys with a narrow working temperature range the billet is deformed directly in the molten medium which surrounds it and the tool.

The drawing shows a diagram for realizing the described method.

The matrix 1 is placed in housing 2 filled with the liquid heating medium 3. The heater is inductor 4 the windings of which are

located around the housing 2. The temperature of the heating medium is controlled by a temperature control device (not shown in the drawing).

The movement of plunger die 5 can be continuous with a given low velocity or intermittent when a small deformation at normal speeds is alternated with standing for extending the softening process.

Billet 6 which is being deformed is heated and deformed in one unit in the melt of some substance (metal, salt, alkali, mineral heat-resistant plastic, etc.), heated to the necessary temperature. The melt provides high-speed heating of the billet and maintains the temperature in the assigned and quite narrow interval in the process of deformation which makes it possible to use slow deformation speeds without fear of the billet cooling. Simultaneously, the melt is a protective medium protecting the metal surface from oxidation, saturation with harmful elements, etc.

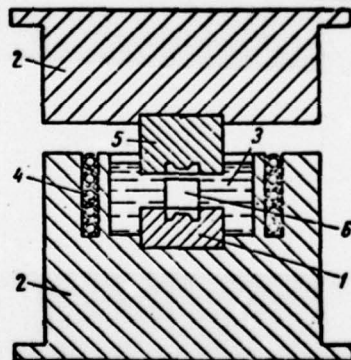
In the described process the lubricating capability of the melt is used to obtain parts with extruded elements of the type of high ribs, projections, etc., with a significant lowering of the specific pressure due to a decrease of friction.

During deformation at low velocities complete softening of the

deformed material is obtained in the process of deformation which increases its plasticity.

OBJECT OF INVENTION

Method of plastic deformation of metals and alloys with heating of the billet in a molten medium, for example, of salts is distinguished by the fact that for the purpose of deforming high-alloy, low-plastic alloys with a narrow working temperature interval the billet is deformed directly in the molten medium which surrounds it and the tool.



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